

AUSTRALIAN MYDAIDAE (DIPTERA).

By G. H. HARDY, Walter and Eliza Hall Fellow in Economic Biology,
University of Queensland, Brisbane.

(Two Text-figures.)

[Read 29th April, 1925.]

This paper, revising the described Mydidae of Australia, was prepared several years ago and, at the time, no less than five species were found to be new, but all the specimens available were old and dilapidated in condition. No further specimens of these, or of any other undescribed Mydids, appear to have been collected in recent years, and this paper, therefore, does not include new forms. No less than four Australian Entomologists have been seeking knowledge of the family, either for purposes of publication or of identification of material in collections, and so, to supply the growing demand for some knowledge concerning these handsome flies, it is considered advisable to issue the paper in its present form, rather than to await the accumulation of sufficient material for description of specific details, as was originally intended.

The Mydidae have been revised twice, by Westwood in 1841, and by Gerstaecker in 1868, and both these authors dealt with the species of the World. Westwood's papers are enhanced in value by the excellent coloured figures, whilst Gerstaecker's work marks a big advance in the taxonomy of the family. In the present revision, various names have been placed as synonyms, one being the generic name *Triclonus*, the two specific names of which are now associated with the genus *Diochlistus* for the first time.

Family MYDAIDAE.

This family is recognizable by the complex venation of the wing described below. It contains more or less large elongate flies that have the antennae, usually long, containing five joints, of which the second is small, the third usually the longest and the fifth much wider than the others, inflated on live, but compressed on dried, specimens.

Wings.—The costal and subcostal veins end before the apex of the wing; the mediastinal vein between them reaches beyond half the length of the costa; the radial vein runs into the subcostal considerably before the wing margin. The upper branch of the cubital vein runs into the subcostal, and the lower branch may run to the wing margin, to the subcostal vein, or into the upper branch. In the latter case, the second submarginal cell becomes entirely enclosed by the cubital fork. The first postical vein may be present or absent; it is suggested, in the latter case, that the first postical may be concurrent with the second as one undescribed species retains the two veins, still separated at the base, enclosing a triangular area. The second postical vein runs to about the apex of the wing.

The third and fourth posticals unite before reaching the wing margin, thus closing the fourth posterior cell. The fifth postical runs to the wing margin and joins the anal vein before reaching there.

Distribution.—The family is not known from Tasmania and, judging from the collections examined, there appears to be one species limited in distribution to Queensland, whilst another extends into that State. The majority of the species occur from New South Wales to Western Australia. The correctness of some of the localities given with original descriptions is doubtful, and it is significant to note that Westwood gives "Adelaidam, Australias occidentalis," apparently confusing Adelaide with Western Australia.

Diochlistus gracilis Macquart is only known by recent specimens collected in Eastern Australia, and yet, under a synonym, Westwood gives it as from Western Australia. Under the same species, Schiner adds "New Zealand," an undoubted error which this author also makes under some of his other references to Australian Diptera.

Notes.—There are nine apparently valid species and two genera described from Australia, and of these, eight are definitely distinct; the other species is not represented in the Australian collections examined. Five undescribed Mydaids are very different in appearance from those already described, but they belong to the same two genera. The species are liable to vary in size, shape, and colour, and there are too few structural characters yet found to allow a reliable key to the species to be formed. To minimize the search necessary for the determination of species, a search that requires access to certain works that are rarely represented in the various scientific libraries, the leading colour characteristics of each species are given here; although this scheme may help considerably in any attempt to identify material, reference to the original descriptions and figures needs to be made, as specimens of unusual colours and markings are otherwise liable to be misidentified.

Key to the Genera of the Mydaiidae.

- First postical vein present, not amalgamated with the second; there are three cells (marked 1, 2 and 3 in figure) between the cell enclosed by the branches of the cubital vein and the hind border of the wing *Diochlistus*.
 First postical vein completely coincident (or mostly so) with the second; there are therefore only two cells (marked 1 and 2 in the figure) between the cell enclosed by the branches of the cubital vein and the hind border of the wing *Miltinus*.

Genus *DIOCHLISTUS* Gerstaecker.

Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 73.—*Triclonus* Gerstaecker, *ibid.*, 75.
 Type, *D. mitis* Gerstaecker, from Swan River, W. Australia.

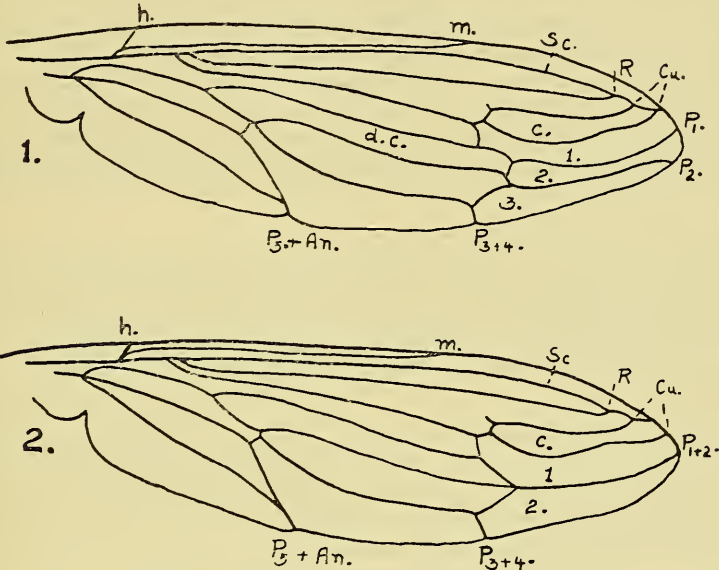
Synonymy.—The differences between the genera *Diochlistus* and *Triclonus*, as given by Gerstaecker, include the structure of the face; the area at the sides of the oral opening are produced and stand out from the eyes in the latter genus, whilst they lie level with, or recede from, the eyes in the former, but this cannot be accepted as of generic value as gradations are found. A second character is the position in which the proboscis is held, namely, horizontally in *Diochlistus* and vertically in *Triclonus*; both positions are found to occur on at least one species placed by Gerstaecker in the latter genus. The wing characters also grade between the species placed under these genera. As Gerstaecker has not offered any reliable character for dividing the genus into two, nor are there any apparent, it is advisable to place the second name as a synonym of the first.

DIOCHLISTUS MITIS Gerstaecker.

Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 73, Pl. i, fig. 1; Osten-Sacken, *Berl. Ent. Zeit.* xxxvi, 1891, 313.

A dull species, black or grey in colour.

Hab.—Western Australia (Gerstaecker). South Australia; 4 ♂, 1 ♀, in the Macleay Museum.



Text-figs. 1-2.—Diagram of the wing venation.
1, *Diachlistus*; 2, *Miltinus*.

h., humeral vein; *m.*, mediastinal vein. *Sc.*, subcostal vein; *R.*, radial vein; *Cu.*, cubital vein with two branches; *P*₁, first postmarginal vein; second and subsequent postmarginal veins denoted by figures *P*₂, etc.; and when two of these run together they are denoted as *P*₃₊₄, etc.; *An.*, anal vein; *d.c.*, discal cell; *c.*, second submarginal, also known as the cubital cell, which is enclosed by the two branches of the cubital vein. The figures 1, 2 and 3 are to draw attention to the number of cells between the cubital cell and the posterior border of the wing; the number of these cells constitutes the most readily perceived distinction between the two genera.

DIOCHLISTUS AURIPENNIS Westwood.

Mydas auripennis Westwood, *Lond. Edin. Phil. Mag.* vi, 1835, 281; *Isis* ii, 1838, 84; *Arc. Ent.* i, 1841, 51, Pl. xiv, fig. 1; Walker, *List Dipt. Brit. Mus.* vi, suppl. 2, 1854, 368.—*Triclonus auripennis* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 75.—*Mydas fulvipennis* Macquart, *Dipt. Exot. suppl.* 4, 1849, 58, Pl. iv, fig. 3.

A yellow species with black thorax. It is peculiar in having the two branches of the cubital vein uniting before they reach the subcostal vein, thus completely enclosing the cubital (second submarginal) cell.

Hab.—Queensland: Brisbane, 1920; Jandowie (Darling Downs), 3 ♂, 1 ♀, December, 1920 (R. Illidge).

DIOCHLISTUS GRACILIS Macquart.

Cephalocera gracilis Macquart, *Dipt. Exot. suppl.* 2, 1847, 32, Pl. i, fig. 5; Walker, *List Dipt. Brit. Mus.* vi, suppl. 2, 1854, 376.—*Triclonus gracilis* Kertész, *Cat. Dipt.* iv, 1909, 34.—*Mydas bispinifer* Westwood, *Trans. Ent. Soc. Lond.* v, 1848, 88, Pl. xiii, fig. 2; Walker, *loc. cit.*, 1854, 370.—*Triclonus bispinifer* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 75; Williston, *Kansas Univ. Quart.* i, 1893, 154, Pl. x, fig. 10.—*Mydas melleipennis* Westwood, *loc. cit.*, 1848, 87, Pl. xiii, fig. 1; Walker, *loc. cit.*, 1854, 369.—*Triclonus melleipennis* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 75.—*Mydas clavata* Macquart, *Dipt. Exot. suppl.* 4, 1849, 59, Pl. iv, fig. 5.—*Harmophana clavata* Thomson, *Eug. Resa, Dipt.*, 1869, 463, Pl. ix, fig. 5.—*Mydas gracilis* Jaenicke, *Abhand. Senckenb. Naturf. Gesell.* vi, 1867, 353, Pl. xliii, fig. 12.—*Mydas effracta* Walker, *Trans. Ent. Soc. Lond.*, iv, 1857, 126.—*Triclonus effractus* Gerstaecker, *loc. cit.*, 76.—*Mydas macquarti* Schiner, *Nov. Reise, Dipt.*, 1868, 153; Hutton, *New Zealand Dipt.*, 1881, 31.—*Harmophana flavipes* Thomson, *Eug. Resa, Dipt.*, 1869, 463.

Synonymy.—For this species, Gerstaecker used the specific name *bispinifer*, as he considered *gracilis* to be preoccupied by *Mydas gracilis* Macquart. Schiner proposed the name *macquarti* to take the place of *clavatus*, as he placed the species under the genus *Mydas* where the latter name had already appeared. *Mydas melleipennis* Westwood, *Mydas effracta* Walker and *Harmophana flavipes* Thomson appear to belong here. The other names were placed as synonyms by Gerstaecker.

Note.—A black species with a pair of yellowish or reddish spots on each of the three or four basal segments of the abdomen. The legs vary in colour.

Hab.—New South Wales: Sydney, December, a series of both sexes. Queensland: Stanthorpe and Tambourine Mountain.

Genus MILTINUS Gerstaecker.

Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 88.

Type, *M. cardinalis* Gerstaecker, South Australia.

MILTINUS CARDINALIS Gerstaecker.

Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 90, Pl. i, fig. 5.

A reddish species; the abdomen with black lateral spots on the segments.

Hab.—South Australia. In the Macleay Museum there are thirty-one specimens without further data.

MILTINUS BICOLOR Westwood.

Mydas bicolor Westwood, *Arc. Ent.* i, 1841, 53, Pl. xiv, fig. 2; Walker, *List Dipt. Brit. Mus.* i, 1848, 228; also vi suppl. 2, 1854, 368.—*Miltinus bicolor* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 90. *Miltinus haemorrhous* Gerstaecker, *loc. cit.*, 89.

Synonymy.—The colour characters of *Mydas bicolor* Westwood and of *Miltinus haemorrhous* Gerstaecker are the same. Both are recorded from the same State, and a series before me agrees with both descriptions and with Westwood's figure. Apparently there are no published characters whereby *haemorrhous* can be distinguished from *bicolor*, even should they prove to be distinct, and on this account they are regarded as one species.

Note.—A black species with the legs and the posterior segments of the abdomen red.

Hab.—Western Australia: Perth, December, 1911, 6 ♂, 1 ♀, all of which have been attacked by *Anthrenus*. The species is very common around Perth, where it can be found hovering over bare sandy patches amongst low vegetation.

MILTINUS MACULIPENNIS Westwood.

Cephalocera maculipennis Westwood, *Arc. Ent.* i, 1841, 55, Pl. xiv, fig. 5; Walker, *List Dipt. Brit. Mus.* vi, suppl. 2, 1854, p. 375.—*Miltinus maculipennis* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 90.

This reddish species with the apex of the abdomen black is rendered very conspicuous by having a large black blotch in the centre of the wing.

Hab.—Western Australia: Cunderdin, 1 ♂, in the Queensland Museum.

MILTINUS SORDIDUS Westwood.

Mydas sordidus Westwood, *Trans. Ent. Soc. Lond.* v, 1848, 89, Pl. xiii, fig. 3; Walker, *List Dipt. Brit. Mus.* vi, suppl. 2, 1854, 370.—*Miltinus sordidus* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 90.—*Mydas limpipedennis* Westwood, *l.c.*, 90; Walker, *loc. cit.*, 369.—*Miltinus limbipennis* Gerstaecker, *loc. cit.*, 90.—*Mydas claviger* Walker, *List Dipt. Brit. Mus.* i, 1848, 229; vi, suppl. 2, 1854, 367.—*Miltinus claviger* Gerstaecker, *loc. cit.*, 90.

Synonymy.—The type of *Mydas sordidus* is from Adelaide; Gerstaecker gives Western Australia as a locality. The type of *M. limpipedennis* is from Western Australia, but as Westwood credited Adelaide to the same State (*Australiae occidentalis*), this recorded habitat cannot be considered satisfactory. Westwood's two names appear to be referable to different forms of the same species. The type of *Mydas claviger* Walker is stated to be near *M. sordidus*, but it will probably prove identical with that species.

Note.—A black species with triangular red lateral spots on the segments of the abdomen.

Hab.—South Australia.

MILTINUS STENOGASTER Westwood.

Mydas stenogaster Westwood, *Arc. Ent.* i, 1841, 53, Pl. xiv, fig. 3; Walker, *List Dipt. Brit. Mus.* i, 1848, 228; vi, suppl. 2, 1854, 368.—*Miltinus stenogaster* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 90.

A black species with a red abdomen.

Hab.—Western Australia.

MILTINUS VIDUATUS Westwood.

Mydas viduatus Westwood, *Lond. Edin. Phil. Mag.* iv, 1835, 281; *Isis* ii, 1838, 85; *Arc. Ent.* i, 1841, 52, Pl. xiv, fig. 2; Walker, *List Dipt. Brit. Mus.* i, 1848, 299; and vi, suppl. 2, 1854, 369.—*Miltinus viduatus* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 89.—*Mydas concinnus* Macquart, *Dipt. Exot.* suppl. 1, 1846, 58, Pl. vi, fig. 5; suppl. 3, 1848, 17, Pl. ii, fig. 1; Walker, *List Dipt. Brit. Mus.* vi, suppl. 2, 1854, 369; V.d. Wulp, *Tijd. v. Ent.* xix, 1876, 171.—*Mydas varipes* Macquart, *Dipt. Exot.* suppl. 4, 1849, 58, Pl. iv, fig. 4.—*Miltinus varipes* Gerstaecker, *Stett. Ent. Zeit.* xxix, 1868, 89.—*Mydas signatus* Walker, *Trans. Ent. Soc. Lond.* iv, 1857, 126.

Synonymy.—Gerstaecker included *Mydas concinnus* Macquart and *Mydas signatus* Walker in the synonymy of this species. *Mydas varipes* Macquart also appears to be the same species.

Note.—Normal specimens of this species are entirely black. In the Macleay Museum there is a variety, from South Australia, that has the fourth and subsequent segments of the abdomen red; this variety must not be confused with *M. bicolor*, and it does not conform to the description of *M. haemorrhous* Gerstaecker.

Hab.—New South Wales: Sydney and Blue Mountains. South Australia: two specimens in the Macleay Museum.
